DETAILED ACTION

Response to Amendments

1. Claims 3 and 7 have been canceled.

Response to Arguments

2. Applicant's arguments filed on 20 July 2011 have been fully considered but they are not persuasive

3. On pages 9, 10 of the Applicant's arguments, the Applicant argues that Garcia-Martin does not teach "accessing a network selection table … network selection table comprises entries that associate point codes with network types" because the routing table in Garcia-Martin is for using the Network Indicator or Signaling Point Code to find the right signaling links to send packets to their destination, thus, the routing table of Garcia-Martin is not for selecting a network type from a point code. Because the signaling pint identifiers of the packets received by the routing table typically have the Network Indicator, the packets that go through the routing table of Garcia-Martin already have the Network Indicators that indicates the network types.

4. The Examiner respectfully disagrees with the Applicant's arguments.

In claim 1, "network selection table comprises entries that associate point codes with network types" is disclosed. The specification of instant application recites "network selection table, which may be either configured manually or via any known auto-detection process, indicates, for each entry in the routing table, the network through which such messages should be routed" (page 7 lines 9), "if network selection table

indicates that network equipment is on an IP network, this will ensure that signaling message sent thereto will be process by the M3UA layer and hence be routed via an IP network. Alternatively, message to destination indicated as being on an SS7 network will be subsequently processed by the MTP3 layer and be routed via an SS7 network" (page 8 lines 6-10), "the network selection table is interrogated to find the entry for the specified point code. The additional flag information indicating the type of network retrieved from the table and based on this information, the signaling message is either processed using MTP3 or using M3UA" (page 8 lines 15-18). The definition of “associate” is "to join or connect together, to bring together or into relationship" in Merriam-Webster dictionary (http://www.merriam-webster.com/dictionary/associate). Accordingly, the broadest reasonable interpretation in light of specification encompasses "point code is related to network types in network selection table” for the claim limitation, and destination and type of network is determined based on specified code and additional flag information indicating the type of network as shown in page 8 lines 6-10.

Accordingly, a network type is not selected from a point code, instead, destination and type of network is determined based on specified code and additional flag information indicating the type of network within network selection table as shown in page 8 lines 6-10.

Garcia-Martin teaches “look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling

Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer (col 5 lines 19-60)." Thus, claim limitation taught by Garcia-Martin because SPC is associated with NI in the look-up (or routing) table.

5. On pages 10, 11 of the Applicant's arguments, the Applicant argues that Niermann discloses in paragraph 0040 that the SG 114A will route the traffic using the Network Indicator of the traffic. Thus, the traffic received at the SG 114A of Niermann already has a Network Indicator that indicates the network type of the destination. Therefore, there is clearly no need to add a network selection table into the signaling gateway SG 114A or any other element in Niermann to select a network type. As a result, one skilled in the art would not have added a network selection table comprising entries that associate point codes with network types into Niermann, and accessing that network selection table to determine how to process a message.

6. The Examiner respectfully disagrees with the Applicant's arguments.

As explained above, he broadest reasonable interpretation in light of specification encompasses "point code is related to network types in network selection table" for the claim limitation, and destination and type of network is determined based on specified code and additional flag information indicating the type of network as shown in page 8 lines 6-10.

In paragraph 0040 of Niermann, SG 114 will route the traffic it receives from its SS7 interface using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic. Prior to routing the packets, routing table may be used to determine whether it is forwarded to a destination in SS7 network or a destination in IP network because it is

notoriously well known that routing table is used to determine for the routing packets. Garcia-Martin from the same or similar fields of endeavor teaches "look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer (col 5 lines 19-60)." Thus, in combination of Niermann and Garcia-Martin, the SG 114 having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet.

7. On pages 12, 13 of the Applicant's arguments, the Applicant argues that Tovander does not teach "processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7" because Tovander merely discloses determine a gateway server (VG/AS) to send a message received from a public switch telephone network (PSTN) and determining which gateways or servers (VG/AS) to send a message from a public switch telephone network is not the same as determining whether a point code associated with the originating network element corresponds to the SS7 network.

8. The Examiner respectfully disagrees with the Applicant's arguments.

Niermann and Garcia-Martin teach "SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet (Niermann Fig. 2, Fig. 5; paragraph 0028, 0039, 0040, 0041; Garcia-Martin col 5 lines 19-60). In particular, MTP3 layer provides message routing between SG and SS7 network (Fig. 5, paragraph 0028) and M3UA layer used between SG and IP

network (Niermann Fig. 5, paragraph 0039), thus, MTP3 layer processes message for SS7 network while M3UA layer processes message for IP network. However, determining whether the message comes from SS7 or IP network is not disclosed.

Tovander teaches "when a message is received from PSTN, mapping is performed based on tDPC, OPC, NI and CIC are used to determine which VG/AS to which the message is sent via Internet" (Fig. 1, 4, 5, col 3 lines 60-65, col 6 lines 59-64) and the message is processed with the MTP3 layer as of receiving a message from PSTN in Fig. 4. Tovander also teaches "when a message from VG/AS via Internet, mapping is performed based on OPC, DPC, SLS, and NI to route message to PSTN (Fig. 1, 4, 5, col 3 lines 60-65, col 4 lines 14-16, col 7 lines 17-23)" and the message is processed with the TCP/IP layer as of receiving a message from Internet in Fig. 4. Thus, the combination of Niermann, Garcia-Martin, Tovander teaches the claim limitation above because SG processes a message with MTP3 layer upon receiving the message having OPC from PSTN while a message is processed with M3UA, which is alternative to TCP/IP layer for connecting to internet, upon receiving the message from Internet.

9. On pages 17, 18 of the Applicant's arguments, the Applicant argues that Larson does not teach "wherein the device is not a signaling gateway" because Larson merely discloses HLR is integrated into a gateway. As such, the HLR of Larson becomes part of the signaling gateway. Thus, the device disclosed by Larson includes a signaling gateway.

10. The Examiner respectfully disagrees with the Applicant's arguments.

Claim 6 discloses "the device comprises location register (HLR) or a service control point" and claim 12 discloses "the device is not a signaling gateway."

Claims 5 and 12, the device, which is not a signaling gateway plays role of signaling gateway between SS7 network and IP network. Although it's not named as signaling gateway, function of the device is same as signaling gateway. The HLR or SCP also plays same role of the signaling gateway having MTP3 layer and M3UA layer to communicate between SS7 network and IP network. Thus, it can be interpreted as HLR, which is different from signaling gateway, performing functions of the signaling gateway.

Larson teaches "HLR is integrated with a gateway, as represented by the HLR-GW, having MTP layer and TCP/IP layer between PSTN and Internet" (Fig. 3, 4, col 3 lines 62-col 4 line 17). Particularly, the WOS gateway functionality is combined with an HLR in a single node (page 3 lines 65-57). In other words, the network node having MTP layer and TCP/IP layer includes the function of HLR in addition to function of gateway. Thus, the network node represented by HLR-GW, which is different from signaling gateway, performs functions of signaling gateway.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

12. all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. **Claims 1, 16** are rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and Tovander (US 6,507,649).

For claim 1, Niermann discloses a method comprising:

- **receiving a message from an originating network element at an interface of a service application, wherein the service application interfaces with both a Signaling System 7 (SS7) network and an Internet Protocol (IP) network** (Fig. 4; Fig. 6; paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service; paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from nodes in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109; paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic), **and wherein the message includes a point code associated with the network**

element (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic);

- **a message transport part layer 3 (MTP3) application programming interface (API) level of a protocol stack to determine how to process the message, wherein the protocol stack comprises both a MTP3 layer and a MTP3 user adaptation layer (M3UA) layer** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic);

Niermann discloses all the subject matter of claimed invention with the exception for **accessing a network selection table and the network selection table comprises entries that associate point codes with network types** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **accessing a network selection table and the network selection table comprises entries that associate point codes with network types** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator

(NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **accessing a network selection table and the network selection table comprises entries that associate point codes with network types** of Garcia-Martin to the method of Niermann, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann and Garcia-Martin disclose all the subject matter of claimed invention with the exception for **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network, processing the message with the M3UA layer if it is determined that the point code associated with the originating network element corresponds to the IP network** whereas Niermann and Garcia-Martin disclose SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet (Niermann Fig. 2, Fig. 5; paragraph 0028, 0039, 0040, 0041; Garcia-Martin col 5 lines 19-60). In particular, M3UA layer is connected to Internet. Tovander from the same or similar fields of endeavor discloses **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds**

to the SS7 network (Fig. 1, 4, 5, col 3 lines 60-65, col 6 lines 59-64: when a message is received from PSTN, mapping is performed based on tDPC, OPC, NI and CIC are used to determine which VG/AS to which the message is sent via Internet; the message is processed with the MTP3 layer as of receiving a message from PSTN in Fig. 4)**,** **processing the message with the** TCP/IP **layer if it is determined that the point code associated with the originating network element corresponds to the IP network** (Fig. 1, 4, 5, col 3 lines 60-65, col 4 lines 14-16, col 7 lines 17-23: when a message from VG/AS via Internet, mapping is performed based on OPC, DPC, SLS, and NI to route message to PSTN; the message is processed with the TCP/IP layer as of receiving a message from Internet in Fig. 4). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network, processing the message with the** TCP/IP **layer if it is determined that the point code associated with the originating network element corresponds to the IP network** of Tovander to the method of Niermann and Garcia-Martin, thereby, SG processes a message with MTP3 layer upon receiving the message having OPC from PSTN while a message is processed with M3UA, which is alternative to TCP/IP layer for connecting to internet, upon receiving the message from Internet. The motivation would have been to provide mechanism in the form of a thin layer within the SS7 protocol stack that makes it possible for ISUP stacks running on distributed processors to run independently without knowledge regarding its distribution (Tovander col 2 lines 28-32).

For claims 16, Niermann discloses

- **wherein thee originating network element is a service switching point (SSP) or a message switching center (MSC)** (paragraph 0025 lines 5-8: SSP can provide an interface between a telecommunications switch such as a Mobile Switching Center (MSC) and other nodes of the SS7 network; paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service; paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from nodes in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109)

15. **Claims 2, 15** are rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and Tovander (US 6,507,649) as applied to claim 1 above, and further in view of Larson et al. (US 6,594,258).

For claim 2, Niermann discloses

- **the service application** (paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service)

Niermann, Garcia-Martin, Tovander disclose all the subject matter of claimed invention with the exception for **a home location register (HLR) or a service control point (SCP**). Larson from the same or similar fields of endeavor discloses **a home location register (HLR) or a service control point (SCP)** (Fig. 3, 4, col 3 lines 62-col 4 line 17: HLR is integrated with a gateway having MTP layer and TCP/IP layer between PSTN and Internet) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **a home location register (HLR) or a service control point (SCP)** of Larson into the method of Niermann, Garcia-Martin, Tovander, thereby, HLR integrated with a SG having MTP3 layer and M3UA layer performs routing between PSTN and Internet. The motivation would have been to preclude unnecessary messaging processing and delays caused by protocol conversion by providing an integrated HLR and gateway (Larson col 1 lines 43-57, col 4 lines 34-37).

For claim 15, Niermann discloses

- **the device** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic; the network selection table implicitly exist because the signaling

gateway 114A determines the destination and the network based upon NI and DPC received from SS7 network)

Niermann, Garcia-Martin, Tovander disclose all the subject matter of claimed invention with the exception for **device is not a signaling gateway.** Larson from the same or similar fields of endeavor discloses **device is not a signaling gateway** (Fig. 3, 4, col 3 lines 62-col 4 line 17: HLR is integrated with a gateway having MTP layer and TCP/IP layer between PSTN and Internet) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **device is not a signaling gateway** of Larson into the method of Niermann, Garcia-Martin, Tovander, thereby, HLR integrated with a SG having MTP3 layer and M3UA layer performs routing between PSTN and Internet. The motivation would have been to preclude unnecessary messaging processing and delays caused by protocol conversion by providing an integrated HLR and gateway (Larson col 1 lines 43-57, col 4 lines 34-37).

16. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and Tovander (US 6,507,649) as applied to claim 1 above, and further in view of Khandri et al. (US 2002/0196779).

For claim 4, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and

Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic)

Niermann and Tovander discloses all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer)**.** Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the method of Niermann and Tovander, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **network selection table populated automatically.**

Khandri from the same or similar fields of endeavor discloses routing **network selection table populated automatically** (paragraph 0016, 0046: RGC database manager performs administration of routing data in the table). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **network selection table populated automatically** of Khandri to the method of Niermann, Garcia-Martin, and Tovander, thereby, the network selection table is populated automatically. The motivation would have been to enhance efficiency of processing the network selection table by administrating the table without human intervention.

17. **Claims 5, 8, 12** are rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326), Tovander (US 6,507,649), and Khandri et al. (US 2002/0196779).

For claim 5, Niermann discloses a system comprising:

- **a communication interface configured to receive a message from an originating network element at an interlace of a service application, wherein the service application interfaces with both a Signaling System 7 (SS7) network and an Internet Protocol (IP) network** (Fig. 4; Fig. 6; paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service; paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from

nodes in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109; paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic), **and wherein the message includes a point code associated with the network element** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic);

- **a message transport part layer 3 (MTP3) application programming interface (API) level of a protocol stack to determine how to process the message, wherein the protocol stack comprises both a MTP3 layer and a MTP3 user adaptation layer (M3UA) layer** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic);

Niermann discloses all the subject matter of claimed invention with the exception for **accessing a network selection table and the network selection table comprises entries that associate point codes with network types** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses

accessing a network selection table and the network selection table comprises entries that associate point codes with network types (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer)**.** Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **accessing a network selection table and the network selection table comprises entries that associate point codes with network types** of Garcia-Martin to the system of Niermann, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann and Garcia-Martin disclose all the subject matter of claimed invention with the exception for **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network, processing the message with the M3UA layer if it is determined that the point code associated with the originating network element corresponds to the IP network** whereas Niermann discloses SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet (Niermann Fig. 2, Fig. 5; paragraph 0028, 0039, 0040,

0041; Garcia-Martin col 5 lines 19-60). In particular, M3UA layer is connected to Internet. Tovander from the same or similar fields of endeavor discloses **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network** (Fig. 1, 4, 5, col 3 lines 60-65, col 6 lines 59-64: when a message is received from PSTN, mapping is performed based on tDPC, OPC, NI and CIC are used to determine which VG/AS to which the message is sent via Internet; the message is processed with the MTP3 layer as of receiving a message from PSTN in Fig. 4)**, processing the message with the** TCP/IP **layer if it is determined that the point code associated with the originating network element corresponds to the IP network** (Fig. 1, 4, 5, col 3 lines 60-65, col 4 lines 14-16, col 7 lines 17-23: when a message from VG/AS via Internet, mapping is performed based on OPC, DPC, SLS, and NI to route message to PSTN; the message is processed with the TCP/IP layer as of receiving a message from Internet in Fig. 4). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to **processing the message with the MTP3 layer if it is determined that the point code associated with the originating network element corresponds to the SS7 network, processing the message with the** TCP/IP **layer if it is determined that the point code associated with the originating network element corresponds to the IP network** of Tovander to the system of Niermann and Garcia-Martin, thereby, SG processes a message with MTP3 layer upon receiving the message having OPC from PSTN while a message is processed with M3UA, which is alternative to TCP/IP layer for connecting to internet, upon receiving the message from

Internet. The motivation would have been to provide mechanism in the form of a thin layer within the SS7 protocol stack that makes it possible for ISUP stacks running on distributed processors to run independently without knowledge regarding its distribution (Tovander col 2 lines 28-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **a processor and a computer-readable storage medium including computer-readable instruction stored therein that, upon execution by the processor, cause the device**. Khandri from the same or similar fields of endeavor discloses a **processor and a computer-readable storage medium including computer-readable instruction stored therein that, upon execution by the processor, cause the device** (paragraph 0019: applications stored in memory executed by microprocessor within signaling gateway). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **a processor and a computer-readable storage medium including computer-readable instruction stored therein that, upon execution by the processor, cause the device** of Khandri to the system of Niermann, Garcia-Martin, and Tovander. The motivation would have been to run the application program on the hardware system properly.

For claim 8, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG

114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic)

Niermann and Tovander discloses all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer)**.** Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the method of Niermann and Tovander, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **network selection table populated automatically.** Khandri from the same or similar fields of endeavor discloses routing **network**

selection table populated automatically (paragraph 0016, 0046: RGC database manager performs administration of routing data in the table). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **network selection table populated automatically** of Khandri to the method of Niermann, Garcia-Martin, and Tovander, thereby, the network selection table is populated automatically. The motivation would have been to enhance efficiency of processing the network selection table by administrating the table without human intervention.

For claims 12, Niermann discloses

- **wherein thee originating network element is a service switching point (SSP) or a message switching center (MSC)** (paragraph 0025 lines 5-8: SSP can provide an interface between a telecommunications switch such as a Mobile Switching Center (MSC) and other nodes of the SS7 network; paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service; paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from nodes in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109)

18. **Claims 6, 11** are rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326), Tovander

(US 6,507,649), and Khandri et al. (US 2002/0196779) as applied to claim 5 above, and further in view of Larson et al. (US 6,594,258).

For claim 6, Niermann discloses

- **the device** (paragraph 0031 lines 1-5: SS7 protocol stack exchanging data between applications across the SS7 network and SCCP connectionless service; paragraph 0034 lines 5-9: SG 114A has an SS7 interface 116 which allows it to receive information from nodes in an SS7 network and it includes an IP interface 118 which allows it to communicate over IP link 109)

Niermann, Garcia-Martin, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **a home location register (HLR) or a service control point (SCP**). Larson from the same or similar fields of endeavor discloses **a home location register (HLR) or a service control point (SCP)** (Fig. 3, 4, col 3 lines 62-col 4 line 17: HLR is integrated with a gateway having MTP layer and TCP/IP layer between PSTN and Internet) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **a home location register (HLR) or a service control point (SCP)** of Larson into the system of Niermann, Garcia-Martin, Tovander, and Khandri, thereby, HLR integrated with a SG having MTP3 layer and M3UA layer performs routing between PSTN and Internet. The motivation would have been to preclude unnecessary messaging processing and delays caused by protocol conversion by providing an integrated HLR and gateway (Larson col 1 lines 43-57, col 4 lines 34-37).

For claim 11, Niermann discloses

- **the device** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic; the network selection table implicitly exist because the signaling gateway 114A determines the destination and the network based upon NI and DPC received from SS7 network)

Niermann, Garcia-Martin, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **device is not a signaling gateway** Larson from the same or similar fields of endeavor discloses **device is not a signaling gateway** (Fig. 3, 4, col 3 lines 62-col 4 line 17: HLR is integrated with a gateway having MTP layer and TCP/IP layer between PSTN and Internet) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **a device is not a signaling gateway** of Larson into the system of Niermann, Garcia-Martin, Tovander, and Khandri, thereby, HLR integrated with a SG having MTP3 layer and M3UA layer performs routing between PSTN and Internet. The motivation would have been to preclude unnecessary messaging processing and delays caused by protocol conversion by providing an integrated HLR and gateway (Larson col 1 lines 43-57, col 4 lines 34-37).

19. **Claims 9** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326), Tovander (US 6,507,649), and Khandri et al. (US 2002/0196779) as applied to claim 5 above, and further in view of Lundstrom (US 2007/0220166).

For claim 9, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic)

Niermann, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer)**.** Therefore, it would have been obvious to the person of ordinary skill

in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the system of Niermann, Tovander, and Khandri, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **the network selection table populated manually**. Lundstrom from the same or similar fields of endeavor discloses **the network selection table populated manually** (paragraph 0016: a table is taught to be manually updated (populated)). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table populated manually** of Lundstrom to the system of Niermann, Garcia-Martin, Tovander, and Khandri. The motivation would have been to provide manual population of a table will enable a system to handle unforeseen events that are not accounted for in automatic population.

20. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326), Tovander (US 6,507,649), and Khandri et al. (US 2002/0196779) as applied to claim 5 above, and further in view of Prasad et al. (US 2003/0016684).

For claim 10, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic; the network selection table implicitly exist because the signaling gateway 114A determines the destination and the network based upon NI and DPC received from SS7 network)

Niermann, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer)**.** Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the system of Niermann, Tovander, and Khandri, thereby, SG having

MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, Tovander, and Khandri disclose all the subject matter of claimed invention with the exception for **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer**. Prasad from the same or similar fields of endeavor discloses **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer** (Fig. 6 550 routing table, 505 MTP 3, 580 M3UA; paragraph 0030 lines 11-23: the processor first reviews the SS7 routing table (RT) to determine the routing context associated with the routing code specified by the received SS7 signal as the destination address and the “upward” routing context indicates that the specified routing code can be identified within a separate IP routing table and thereby indicating the signal can be communicated over an IP network; paragraph 0031 lines 1-3: in response to a determination that the specified routing context is upward, the processor then reviews the IP routing table stored within the serving STP) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer of Prasad** to the system of Niermann, Garcia-Martin,

Tovander, and Khandri. The motivation would have been to transiently connect and interface with IP network without requiring undesirable or complex changes (Prasad paragraph 0008 lines 10-13).

21. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and Tovander (US 6,507,649) as applied to claim 1 above, and further in view of Prasad et al. (US 2003/0016684).

For claim 13, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic; the network selection table implicitly exist because the signaling gateway 114A determines the destination and the network based upon NI and DPC received from SS7 network)

Niermann and Tovander discloses all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-

9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer)**.** Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the method of Niermann and Tovander, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer.** Prasad from the same or similar fields of endeavor discloses **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer** (Fig. 6 550 routing table, 505 MTP 3, 580 M3UA; paragraph 0030 lines 11-23: the processor first reviews the SS7 routing table (RT) to determine the routing context associated with the routing code specified by the received SS7 signal as the destination address and the “upward” routing context indicates that the specified routing code can be identified within a separate IP routing table and

thereby indicating the signal can be communicated over an IP network; paragraph 0031 lines 1-3: in response to a determination that the specified routing context is upward, the processor then reviews the IP routing table stored within the serving STP) Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **network selection table comprised within the MTP3 API level of the protocol stack is separate from a routing table in the MTP3 layer of Prasad** to the method of Niermann, Garcia-Martin, and Tovander. The motivation would have been to transiently connect and interface with IP network without requiring undesirable or complex changes (Prasad paragraph 0008 lines 10-13).

22. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable by Niermann (US 2002/0131427) in view of Garcia-Martin et al. (US 7,054,326) and Tovander (US 6,507,649) as applied to claim 1 above, and further in view of Lundstrom (US 2007/0220166).

For claim 14, Niermann discloses

- **the network** (paragraph 0040 lines 6-9: the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic; paragraph 0041 lines 5-8: the SG 114A applies global title translation to determine the destination point code, then it uses the network identifier and the DPC to determine how to route the SS7 signaling traffic)

Niermann and Tovander discloses all the subject matter of claimed invention with the exception for **the network selection table** whereas Niermann discloses the SG 114A will route the traffic it receives from its SS7 interface 116 using the Network Indicator (NI) and Destination Point Code (DPC) of the traffic (paragraph 0040 lines 6-9). Garcia-Martin from the same or similar fields of endeavor discloses **the network selection table** (col 5 lines 19-60: look-up (or routing) table is used by MTP level 3 to perform the mapping g between the signaling identifiers and signalling links upon receiving MAP message including Network Indicator (NI) and destination Signalling Point Code (SPC) and it is associated with a MTP level 3 layer and TCP/UDP adaptation layer)**.** Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table** of Garcia-Martin to the method of Niermann and Tovander, thereby, SG having MP3 layer and M3UA layer routes the message by using a routing table containing DPC, NI, etc. to PSTN (SS7) or Internet. The motivation would have been to change IP routing information and/or destination signaling point reflected only in the single common table without updating multiple translation tables (Garcia-Martin col 3 lines 25-32).

Niermann, Garcia-Martin, and Tovander disclose all the subject matter of claimed invention with the exception for **the network selection table populated manually**. Lundstrom from the same or similar fields of endeavor discloses **the network selection table populated manually** (paragraph 0016: a table is taught to be manually updated (populated)). Therefore, it would have been obvious to the person of ordinary skill in the art at the time of invention was made to incorporate **the network selection table**

populated manually of Lundstrom to the method of Niermann, Garcia-Martin, and Tovander. The motivation would have been to provide manual population of a table will enable a system to handle unforeseen events that are not accounted for in automatic population.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jae Y. Lee whose telephone number is (571) 270-3936. The examiner can normally be reached on Monday through Friday from 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAE Y LEE/
Primary Examiner, Art Unit 2466